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and even with serious vibration no blurring of a high power image results. The particles of sand vibrate among themselves and absorb practically all of the shock.

Binghamton, N. Y. ALFRED B. HITCHENS.
Research Laboratory.

PHOTOMICROGRAPHS OF CRYSTALLIZABLE CHEMICAL SALTS

The above is the title of an Atlas which is a compilation of photomicrographs made from a careful selection of many hundreds of microscopical slides of recrystallized chemical salts. These are made by using very weak solutions, and placing four drops of such solution upon slides having the usual cement rings, allowing evaporation to take place very slowly. A few of the results are presented in the accompanying figures.

The photomicrographs in this Atlas were made as one of the steps in an endeavor to work out a method of determining the crystallizable chemical salts found in evaporated saliva during a salivary diagnosis. It was proposed to do this by means of microscopical comparison of known salts, evaporated from known chemical solutions, with the unknown salts as found in the evaporated saliva. No attempt has been made, however, to exhaust the possible chemical combinations but rather to present typical crystalline forms of various salts, many of which are known to exist in the body tissues and fluids under normal and pathological conditions, thereby placing at the disposal of the student of research auxiliary help toward an understanding of the characteristics which confront him through the microscopic examination of fluids from the body.

In the figures shown herewith the magnification is 100 diameters.

Figures 1, 2, 3, 4 and 5 are taken from the Atlas, while figure 6 is a photomicrograph made from a slide upon which was evaporated the usual four drops of human saliva. Upon observing the crystalline forms through the microscope, one having become acquainted with the illustrations in the Atlas at once recognizes a similiarity between his microscopic observation as shown in figure 6 and the photomicrograph as shown in figure 5. This is one of the older methods of comparing the unknown with the known.

Further accuracy may be gained, however, by having at one's command a collection of the various salts; and when a certain one of these is suspected in the system, one may make a slide, or better, several slides of the suspected salt. One of these slides may be directly compared with the human material supposed to contain this substance, by means of a comparison eyepiece, which allows one to observe one-half of each field at the same time with one eye, thus presenting one of the most modern methods of comparing the unknown with the known, as shown in figure 7.

For still further identification, individual crystals may be removed from the slide with a coarse hair or fine glass needle and tested by the usual chemical methods.

The author feels that this method of studying the crystal formation would be of great value to the diagnostician, and that a course in micro-crystallography should be made a part of medical education.

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A NEW MOUNTING MEDIUM

All of the media in present use have some defects, and it is probable that a perfect medium will never be found, but I have endeavored to find one in which the most serious defects are eliminated.

Balsam and damar, dissolved in xylene, are ideal media for those objects which are adapted to them. The fact that xylene boils at a low temperature makes it easy to drive off air bubbles by very gentle heat. But it is necessary to have all objects, mounted in either balsam or damar, entirely free from water. There are many objects which can not withstand dehydrating. Many delicate tissues and organisms are almost destroyed from passing them through the different strengths of alcohol necessary for mounting in balsam or damar.

The refractive power of such media renders them unsuitable for some objects. Objects having about the same index of refraction as these media are almost or quite invisible after they are mounted. Again xylene balsam is never quite free from color if it has been exposed to the light.